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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/020,331

12/12/2001

Michael T. Milbocker

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07/10/2008

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EXAMINER

FUBARA, BLESSING M

ART UNIT

PAPER NUMBER

1618

MAIL DATE

DELIVERY MODE

07/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/020,331	<b>Applicant(s)</b> MILBOCKER, MICHAEL T.	
	<b>Examiner</b> BLESSING M. FUBARA	<b>Art Unit</b> 1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-14,17-30,40-42 and 44-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-14,17-30,40-42 and 44-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/14/08</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The examiner acknowledges receipt of request for extension of time, request for continued examination under 37 CFR 1.114, IDS, amendment and remarks filed 4/14/08. Claims 1, 2, 17, 44-47 and 51 are amended. Claims 1-3, 5-14, 17-30, 40-42 and 44-52 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/14/08 has been entered.

#### ***Response to Arguments***

2. **Previous rejections that are not reiterated herein are withdrawn.**

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-3, 6-14, 17, 19-30, 40-42 and 44-52 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wood (US 4,241,537).

5. Wood discloses a composition comprising isocyanate terminated polyurethane prepolymer (abstract; column 2, lines 61-65) that comprises at least three functional groups (column 5, lines 37-40); the mixture forms a gel (column 5, lines 10 and 11); the polymer contains ethylene oxide (EO) units and propylene oxide (PO) units with specific requirement that the PO unit be present at less than 50% (column 6, lines 37-39); preferably the hydrophobic PO is at about 30% and the EO is greater than about 70% preferably (column 7, lines 27, 28, 35-37); the isocyanates are present as toluene-2,4-diisocyanate and toluene-2,6-diisocyanate at a ratio of 80:20 (column 8, lines 15, 16; column 10, lines 57 and 58); isophorone diisocyanate is also present or employed (column 8, line 56); the polymer formed between or from the PO and EO in the presence of the isocyanates is block, random or both (column 7, line 15). The ratio of the EO to PO, the number of functionalities of at least 3 as stated above, the amount of water which is present at 50-95% (column 3, lines 39-41) meet the limitations of claims 1-4, 6-11, 17, 19, 20-30, 40-42, 44-52; claims 12-14 recite the properties of the polymer and the product of the prior art is capable of those properties. The concentration of the isocyanate is low (column 6, lines 6-14) resulting in minimal free isocyanate. However, in the alternate the silence of Wood on the presence of free isocyanate in the composition may indicate composition that is free of the NCO or minimal amount present since the starting amount is low at 2 meq/g. Therefore, taking the general teaching of the reference, it would be prima facie obvious that the amount of the isocyanate remaining is very minimal.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (US 5,624,972).

Muller discloses polymeric compositions comprising isocyanate-terminated polymers and a polyisocyanate composition (column 3, lines 8-16) and the composition comprises at least two polyisocyanate compositions, one is low in NCO polyisocyanate and the other is high NCO polyisocyanate (abstract). Toluene diisocyanate (claim 6) and isophorone diisocyanate (column 6, line 45) are examples of polyisocyanates. The functionality of the polyisocyanate terminated polyol is between 2 and 8 with an excess of isocyanate composition (column 3, lines 8-16). Additionally, Muller discloses that the composition comprises at least one other free polyisocyanate composition (See column 6, lines 38-62). These polymeric compositions contain PO/EO units; in the random copolymer, the oxyethylene content is from 10-80% and 2-30% for block copolymers (column 4, line 67 to column 5 line 5; column 7, line 64 to column 8 line 25); 80/20 EO/PO and 25/75 PO/EO are also used (column 9, lines 46, 47). Muller discloses a range of PO: EO polymers. For example, random copolymer having the oxyethylene content of from 10-80% and 2-30% for block copolymers (column 4, line 67 to column 5 line 5; column 7, line 64 to column 8 line 25) is disclosed; also, 80/20 EO/PO and 25/75 PO/EO are also used as disclosed in column 9, lines 46, 47.

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The recitation in amended claim 1 that the functionality of the polyol is at least 1.5-8 reads on a Muller's polyol where the functionality is between 2 and 8, with at least 1.5 reading on 2 and not more than 5% falling between 2 and 8%. Muller meets the limitations of claims 1-3 and 8. Muller also teaches that for a random or block copolymer, the EO content can be up to 50% (column 5, lines 3 and 4). This suggestion indicates that the amount of the EO can be varied to obtain the desired type of polymer. Therefore, taking the teachings of Muller, one having ordinary skill in the art at the time the invention was made would have reasonable expectation of success that varying the amount of the amount of the EO relative to the PO would lead to flexible polymeric foam.

### ***Response to Arguments***

8. Applicant's arguments filed 4/14/08 have been fully considered but they are not persuasive.

9. Applicant's primary argument is that in Muller, the polymer that has the 10-80% EO is a random polymer that is different from the block polymer recited. The examiner has carefully considered all the arguments relating to the random, block polymer when the prior art is considered against that claims. The examiner has withdrawn the rejection under 35 USC 102(b). In its place, a rejection is made under 35 USC 103 because there is a disclosure in Muller that the amount of the EO in a block polymer can be present up to 50% suggesting that the amount of the EO is variable. Also applicant has stated in the instant specification as previously noted, that applicant describes the block structure to be random or regular at paragraph [0034] of the published application and it is the only section of the instant specification that describes block structure of the inventive copolymer and this is significant in

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considering block vs. random. The references provided by applicant also show that block copolymer can be random or regular. In any event the suggestion that the EO content can go up to 50% in a block copolymer is suggestive to the artisan to optimize the polymer in terms of the EO and PO content in order to arrive at the anticipated flexible polymer Muller.

10. Claims 1-3, 5-14, 17-30, 40-42 and 44-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (US 5,624,972). Please note that claims 49-52 were inadvertently omitted in the previous rejections.

Muller discloses polymeric compositions comprising isocyanate-terminated polymers and a polyisocyanate composition (column 3, lines 8-16) and the composition comprises at least two polyisocyanate compositions, one is low in NCO polyisocyanate and the other is high NCO polyisocyanate (abstract). Toluene diisocyanate (claim 6) and isophorone diisocyanate (column 6, line 45) are examples of polyisocyanates. The functionality of the polyisocyanate terminated polyol is between 2 and 8 with an excess of isocyanate composition (column 3, lines 8-16). Additionally, Muller discloses that the composition comprises at least one other free polyisocyanate composition (See column 6, lines 38-62). These polymeric compositions contain PO/EO units; in the random copolymer, the oxyethylene content is from 10-80% and 2-30% for block copolymers (column 4, line 67 to column 5 line 5; column 7, line 64 to column 8 line 25); 80/20 EO/PO and 25/75 PO/EO are also used (column 9, lines 46, 47). Muller discloses a range of PO: EO polymers. For example, random copolymer having the oxyethylene content of from 10-80% and 2-30% for block copolymers (column 4, line 67 to column 5 line 5; column 7, line 64 to column 8 line 25) is disclosed; also, 80/20 EO/PO and 25/75 PO/EO are also used as disclosed in column 9, lines 46, 47.

Muller provides polymeric compositions comprising isocyanate-terminated polymers and a polyisocyanate composition as is discussed above. Future intended use carries no patentable weight in a composition claim; and if the instant composition is applicable as a tissue adhesive, the composition of Muller should also be applicable as a tissue adhesive since Muller discloses polyol and polyisocyanate. Specifically, the random copolymer having 10-80% EO content (column 4, line 67 to column 5 line 1) suggests a PO content of about 20-90%. Thus while Muller does not specifically disclose the percent propylene oxide recited in claim 4, there is a suggestion for a broader range of 20-80% that overlaps the 10% at the lower end and encloses the 30% at the upper end. Muller suggests PO:EO copolymer that has a ratio of from 20-80% in the PO. There is thus a suggestion for the range recited in claim 4 and the declaration of Milbocker has not taken into account all the combinations of PO:EO disclosed in the Muller reference, and it could also be said that the ranges used in the declaration filed 2/23/06 also read on the ranges disclosed by the Muller reference.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teachings of Muller to device compositions comprising one or more polyols terminated with a polyisocyanate and free polyisocyanate. One having ordinary skill in the art would have been motivated to use the desired amounts of PO and EO as suggested by Muller that would be expected to result in a flexible polyisocyanate polymeric composition/adhesive having the inherent properties of the adhesive.

### ***Response to Arguments***

11. Applicant's arguments filed 4/14/08 have been fully considered but they are not persuasive.



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Applicant's arguments here is the same as for the 35 USC 102, that Muller does not teach or suggest block copolymer that has 10-30% PO.

The examiner disagrees because Muller suggests that the block polymer in Muller can have up to 50% EO. This teaching is a clear suggestion that the copolymer can be optimized to yield the contemplated flexible product. Therefore, Muller renders obvious the claims according to the rejections of record.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BLESSING M. FUBARA whose telephone number is (571)272-0594. The examiner can normally be reached on 7 a.m. to 5:30 p.m. (Monday to Thursday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Blessing M. Fubara/  
Examiner, Art Unit 1618